4 July 2016 - The Met Office will showcase novel ways in which new technologies can help us monitor the weather and improve our forecasts at this year's Royal Society Summer Science Exhibition (RSSSE) this week.

As weather forecasting models continue to advance there is a need for a greater volume of observations and the Met Office is finding innovative and unlikely ways to observe the weather.

The Met Office's exhibit "Getting a measure of the weather" will demonstrate our new Weather Observations Website (WOW), how we get weather data from commercial aircraft Mode-S navigational signals, and calculate the amount of water in the atmosphere from Global Positioning System (GPS) satellite signals.

WOW is a platform that enables anyone to get involved and submit, share and visualise their weather observations. The website was initially launched in 2011 and since then we have received over 850 million observations from 200 countries around the world. We have recently launched the new WOW website which will make it easier than ever to share experiences of the weather and join in the nation's favourite conversation.

Mode-S signals are broadcast by commercial aircraft for use by air traffic management and other aircraft. By intercepting and analysing these signals (with the permission and support of ATM and the airlines), we can obtain extra wind speed, wind direction and temperature data.

Signals from GPS satellites to the surface are slowed down by the atmosphere. The delay caused by water vapour in the atmosphere varies as the weather changes due to the amount of water in the atmosphere going up and down. By calculating the delay, it can be determined whether there is enough water in the atmosphere to form clouds or not, and how much rain could fall.

Scientists from the Met Office are presenting their research at the Royal Society's annual Summer Science Exhibition which opens to the public officially tomorrow (5 July 2016).

Exhibitors from 22 institutions will run demonstrations and activities to help the public understand the research they do, and hopefully help a younger generation be inspired by science.

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